RINGKASAN

Tomat merupakan sayuran buah yang dapat dimanfaatkan sebagai bahan pangan, bahan baku industri, obat, dan bahan kosmetik. Upaya untuk meningkatkan produksi tomat salah satunya yaitu penggunaan pupuk organik. *Compost tea* adalah ekstrak kompos yang kaya akan mikroorganisme yang menguntungkan, selain mengandung hara, *compost tea* juga dapat menekan serangan hama dan patogen. Penelitian ini bertujuan untuk mengetahui pengaruh jenis bahan *compost tea* dengan beberapa konsentrasi terhadap pertumbuhan dan hasil tanaman tomat.

Penelitian dilaksanakan pada bulan Mei 2018 sampai Oktober 2018 di *Eksperimental Farm* dan Laboratorium Agronomi dan Hortikultura, Fakultas Pertanian, Universitas Jenderal Soedirman. Rancangan yang digunakan adalah rancangan acak kelompok (RAK) non faktorial dan tiga kali ulangan. Perlakuan pada penelitian ini adalah *compost tea* pupuk kandang sapi konsentrasi 5%, *compost tea* pupuk kandang sapi 10%, *compost tea* pupuk kandang sapi 15%, *compost tea* pupuk kandang ayam 5%, *compost tea* pupuk kandang ayam 10%, *compost tea* pupuk kandang ayam 15%, *compost tea* limbah baglog jamur 5%, *compost tea* limbah baglog jamur 10%, *compost tea* limbah baglog jamur 15%, dan kontrol. Variabel yang diamati yaitu tinggi tanaman, luas daun, klorofil a, klorofil b, klorofil total, kehijauan daun, lebar stomata, kerapatan stomata, volume akar, berat tajuk kering, berat akar kering, rasio tajuk akar, volume buah, bobot buah total, jumlah bunga. Hasil penelitian dianalisis dengan sidik ragam (ANOVA) pada taraf kesalahan 5% dan apabila nyata dilanjutkan dengan *Duncan's Multiple Range Test* (*DMRT*).

Hasil penelitian menunjukkan bahwa *compost tea* meningkatkan klorofil a, klorofil b, klorofil total, kehijauan daun, lebar stomata, volume akar, jumlah bunga, bobot buah total, dan volume buah. Pemberian *compost tea* tidak berpengaruh pada tinggi tanaman, bobot tajuk akar, bobot akar kering, rasio tajuk akar dan kerapatan stomata. *Compost tea* pupuk kandang ayam dapat meningkatkan hasil tanaman tomat sebesar 20,8 ton/ha.

SUMMARY

Tomato is a vegetable fruit that can be used for food, industrial ingredients, medicine, and cosmetic ingredients. The application of organic fertilizer is important in tomato cultivation like solid organic fertilizer or liquid organic fertilizer. Compost tea is the compost extract, that is rich of beneficial microorganism and nutrient content, compost tea also can suppress the attack of pests and pathogens. The research was aimed to study the effect of the type of material compost tea with some concentration to the growth and yield of the tomato plant.

The research was conducted from May until Oktober 2018 at Experimental Farm and Laboratory Agronomy and Horticulture, Faculty of Agriculture, Jenderal Soedirman University. The research was arranged by a Randomized Completely Block Design (RCBD) non-factorial and repeated three times. The treatments of this research were compost tea of cattle manure 5%, compost tea of cattle manure 10%, compost tea of cattle manure 15%, compost tea of chicken manure 5%, compost tea of chicken manure 10%, compost tea of chicken manure 15%, compost tea of mushrooms media waste 5%, compost tea of mushrooms media waste 10%, compost tea of mushrooms media waste 15%, and control. The observed variables were plant height, leaf area, chlorophyll-a content, chlorophyll-b content, total chlorophyll content, leaf greenness, stomata width, stomata density, root volume, plant dry weight, roots dry weight, shoot-root ratio, the number of flowers, fruits volume, and total fruits weight. result of the research was analyzed by analysis of variance (ANOVA) at error level 5% and Duncan's Multiple Range Test (DMRT).

The research showed that compost tea increase of chlorophyll-a content, chlorophyll-b content, total chlorophyll content, leaf greenness, stomata width, root volume, number of flowers, total fruit weight, and fruit volume. Application of compost tea does not affect on plant height, roots dry weight, plant dry weight, shoot-root ratio, and stomata density. Compost tea of chicken manure can increase the yield of tomato by 20,8 ton/ha.